

REMARKS**1. The Amendments / Claim Objections**

Claim 47 is canceled to obviate the objection under 37 CFR 1.75(c). Otherwise, the claims are unchanged.

2. Sections 1 and 2 of the Office Action: Rejection of Claims 1-5, 7-8, and 10-11 under 35 USC §112(1) and (2)

These rejections are repeated from the Office Action of August 5, 2004. The Office Action notes at pages 7-8 that the related rebuttal arguments of Sections 2 and 3 of the November 4, 2004 Response have been considered, but are not found persuasive because:

The examiner does not agree with the argument. Even though the specification fully discloses the invention, the claims do not. As stated by MPEP 2174, "If the specification discloses that a particular feature or element is critical or essential to the practice of the invention, failure to recite or include that particular feature or element in the claims may provide a basis for a rejection based on the ground that those claims are not supported by an enabling disclosure." Therefore, the 112 rejections are maintained.

However, the specification nowhere sets forth any feature or element "critical or essential to the practice of the invention" recited in the rejected claims 1-5, 7-8, and 10-11. Note, for example, page 12 of the application, which states that:

To summarize, preferred versions of the invention include *one or more* of the following features

Adjustable Spacing Between Anodes in Multi-Anode Arrays: Preferred anode arrays made in accordance with the invention do not irreversibly affix the anodes together in a fixed spaced relation, and thus users can respace the anodes for tuning, realignment, and repair/replacement reasons. The ability to remove, replace, and/or respace anodes in an array allows removal of an anode and replacement with an anode of the same or a different type, respacing anodes to tune the array to have desired characteristics, and/or addition of further anodes to the array (and respacing of all anodes for tuning) as desired.

(Emphasis added.) The invention of claims 1-5, 7-8, and 10-11 recites one of the foregoing features listed on page 12: adjustable spacing between anodes. This passage plainly shows that claim 1 (and thus its dependent claims 2-5, 7-8, and 10-11) do not omit any essential element or feature. Thus, since the claims do not omit any essential elements/features, and in view of the rebuttal arguments of Sections 2 and 3 of the November 4, 2004 Response, claims 1-5, 7-8, and

10-11 are submitted to be in full compliance with §112. The claims are fully enabled under §112(1) since one of ordinary skill could surely make and use the claimed invention after reading the specification (and it is noted that the Office Action admits at page 7, next to last line, that “the specification fully discloses the invention”). As for §112(2), one of ordinary skill would surely understand what is encompassed by the claim and what is not. The cases noted in Section 3 of the November 4, 2004 Response plainly state that so long as the scope of the claims is clear, §112(2) does not require the Applicant to recite in its claims every component and subcomponent of a working embodiment of the invention. Kindly withdraw the rejections.

More to the point, if these rejections are maintained on the basis that the claims lack some feature/element which is described as essential in the specification, *kindly point out for the record where the specification states that some element or feature is essential*. Unless and until this is shown, the §112 rejections are improper because they state a conclusion – that the claims lack some feature which is described as essential – but the rejections nowhere state what the allegedly essential feature is, or where the specification states that this feature is essential.¹ *Until we know what the allegedly essential features are, and where the specification is alleged to state that these features are essential, we cannot effectively respond to these rejections.*

We submit that the specification – for example, the passage set forth above – plainly shows that the claims *do not* omit any essential elements, and that the claims are complete and enabled as per Sections 2-3 of the November 4, 2004 Response. Again, if the Examiner feels otherwise, kindly indicate what are the allegedly essential missing features, and where Applicant’s specification states that these features are essential.

¹ In order to make a proper rejection under §112, the Examiner must set evidence or reasoning to support the basis for the rejection. See, e.g., *Ex parte Hitzeman*, 9 USPQ2d 1821, 1822 (Bd. Pat. App. & Int., 1987) (“[I]t is incumbent on the PTO, whenever a rejection on this basis [§112(1)] is made, to advance acceptable reasoning or evidence which is inconsistent with enablement”).

3. Section 3 of the Office Action: Rejection of Claims 1, 3-7, 10, 12, 24, 26, 28, 39-44, and 46-47 under USC §103(a) view of *Friedman et al.* (Multilayer Anode with Crossed Serpentine Delay Lines for High Spatial Resolution Readout of Microchannel Plate Detectors”) and U.S. Patent 3,581,091 to *Meijer*

Kindly withdraw these rejections, which allege that:

Meijer discloses a particle detector having first and second anodes, wherein no structure is interposed between the anodes (*FIG. 2, element 2 and 5*) so the space between the anode is adaptably adjustable (*column 1, line 15-25 and column 2, line 32-37: The distance between the two anodes depends on the diameter of the anodes 2, 5*)...

(Page 4, Office Action.) Regarding independent claim 1 (and its dependent claims 3 and 6), claim 24 (and its dependent claim 26), and independent claim 39 (and its dependent claims 42, 43, and 47), these claims are understood to be rejected as obvious in view of *Friedman* and *Meijer* because:

it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the detector disclosed by *Friedman et al.* such as no structure is interposed between the anodes so the space between the anodes is adaptably adjustable as disclosed by *Meijer*. The motivation for doing so would have been to obtain a spectrometer which makes more accurate determination possible as taught by *Meijer* (column 1 lines 53-55).

(Pages 4-5 of Office Action.) The rejections are wrong in several respects.

First, it appears that column 1 lines 15-25 and column 2 lines 32-37 of *Meijer* are cited for the proposition that *Meijer*'s "anodes" 2 and 5 (actually counters) are spaced to be adaptably adjustable.² However, *Meijer* does not state this, and rather *Meijer* plainly states that the counters are spaced by a distance equal to the diameter of the counters (here, 20 mm):

² It may be useful to refer to Section 5 of the November 4, 2004 Response, which explained why the structures of U.S. Patent 3,581,091 to *Meijer* and U.S. Patent 3,529,161 to *Oosthoek* are not in fact delay line anodes.

In the known arrangement, a neutron telescope, according to the above described principle, the distance between the scattering foil and the first counter and that between the two counters likewise is approximately equal to the diameter of the counters and a number of tantalum foils are used for limiting the proton beam. Typical values for the diameter of the counters are 1 to 2 cm.

Referring now to FIG. 1 in which the settings and the electrode supply wires are not shown, reference numeral 1 denotes a polyethylene foil, thickness 10 microns 2 is a silicon barrier layer counter. The thickness of 2 is 30 microns the diameter 20 mm. On the upper side of the disc, a number of electrode strips 3 of gold are vapor-deposited, thickness 0.3 micron, distance mutually 100 microns. On the lower side strips 4 of aluminum are provided so as to intersect the strips 3 at right angles.

At a distance of 20 mm. below the disc 2, the disc 5, thickness 1.5 mm., is arranged which likewise consists of silicon having at its upper side electrodes 6 of gold and at its lower side electrodes 7 of aluminum. The direction of a neutron beam is denoted by 8.

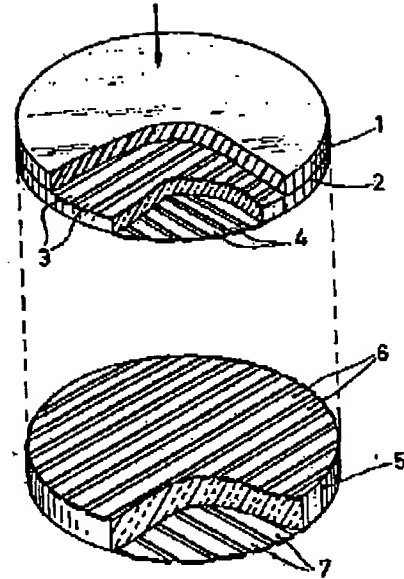


FIG. 1

Meijer requires this spacing between the anodes/counters, as in *Friedman*, since failure to precisely space the anodes/counters will result in impedance mismatch and degraded (or destroyed) signals. Note, for example, the discussion at page 8 line 24-page 9 line 16 of the present application; see also FIG. 4 of *Friedman* (showing required design thicknesses for the dielectric layers separating the anodes, and the thickness error when the design was manufactured).³ Since the *Meijer* counters plainly do not have adjustable diameter – it does not even seem that such a feature could be possible – they plainly do not have adjustable spacing.

³ Note that in FIG. 4, the upper delay line anode is labeled as “upper board,” the lower anode is labeled by “lower board,” and the duroid 6002 layer therebetween maintains them at a fixed distance.

Also, since *Meijer* is being used to modify *Friedman*, it is important to look to both references *in their entireties*, as required by MPEP 2141.02. Here, note that *Friedman* starts with two separate delay line anodes, just as *Meijer* uses two counters (see discussion at page 599 of *Friedman*) – but *Friedman* then bonds/fuses the two anodes together, to the design distance noted in FIG. 4, in order to avoid any variability in spacing. Consider: would one of ordinary skill truly regard it as obvious to modify *Friedman* as allegedly suggested by *Meijer* if *Friedman* first starts with an arrangement similar to *Meijer* (separate anodes/counters), but then attaches the anodes together so that they have a firmly fixed distance? It is plainly contrary to *Friedman*'s purposes to use separate anodes, and it is in no way beneficial or obvious to separate *Friedman*'s anodes to be adjustably respaceable. See MPEP 2143.01 (subsection entitled "The Proposed Modification Cannot Render The Prior Art Unsatisfactory For Its Intended Purpose").

It is therefore seen that *Meijer* does not in any way teach or suggest adjustable spacing – it teaches spacing the counters apart by a distance equal to their diameters – and such fixed spacing is squarely in line with the other prior art of record, including *Friedman*. Independent claims 1, 24, and 39 are therefore submitted to be allowable.

Regarding dependent claims 4-5 and 40-41, note that in both *Friedman* (see FIG. 4) and *Meijer* (see foregoing passages, noting 30 micron thickness for counter 2 and 1.5 mm thickness for counter 5), the anodes are very different (and they have to be different in order to have coupled impedances). Thus, neither reference offers any disclosure or suggestion of the arrangement recited in claims 4-5 and 40-41.

Regarding claims 10 and 44: As noted in the Response of April 30, 2004, "flex circuit" is a term of art referring to flexural circuit boards (see, e.g., page 14 lines 1-8, page 18 lines 15-17 of the application). *Friedman* does not disclose the use of flex circuits, and rather teaches the use of rigid boards (see page 599) – which are further bonded to a brass plate for even greater rigidity. Consider that use of a flex circuit appears contrary to the prior art since such a circuit, being flexible, would seem to allow easier bending of a portion of an anode so that it would be mis-spaced with respect to the other anode (thus causing the aforementioned impedance mismatch). Thus, neither *Friedman* nor *Meijer* teach or suggest the arrangement recited in claims

10 and 44.

4. Section 4 of the Office Action: Rejection of Claims 2, 25, 27, and 48-49 under USC §103(a) view of *Friedman et al.* (Multilayer Anode with Crossed Serpentine Delay Lines for High Spatial Resolution Readout of Microchannel Plate Detectors”), U.S. Patent 3,581,091 to *Meijer*, and U.S. Patent 3,359,421 to *Perez-Mendez et al.*

Claim 2 is dependent from independent claim 1, claims 25 and 27 are dependent from independent claim 24, and claims 48-49 are dependent from independent claim 39. All are submitted to be allowable for at least the same reasons noted above in Section 3 of this Response.

5. In Closing

If any questions regarding the application arise, please contact the undersigned attorney. Telephone calls related to this application are welcomed and encouraged. The Commissioner is authorized to charge any fees or credit any overpayments relating to this application to deposit account number 18-2055.

For the Applicant,



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